

RAMAKRISHNA MISSION VIDYAMANDIRA
NEP Syllabus B.Sc. Computer Science

Semester-III

Course Code: 3CMSMJC1

Credit: 4

Course Type: Major Course

Course Outcome:

- i) To understand the basics of web development and the role of HTML, CSS, Javascript and Django.
 - ii) To create well-structured HTML documents using proper tags and elements.
 - iii) To apply CSS to style web pages, including layout, typography, colors, and images.
 - iv) To implement responsive design techniques to ensure optimal display on different devices.
 - v) To incorporate multimedia elements, such as images, videos, and audio, into web pages.
 - vi) To understand best practices for organizing and maintaining code in web development projects.
 - vii) To develop and deploy a basic website using HTML, CSS, Javascript and Django.
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3CMSMJC1: Web Programming

Credit: 3

Marks: 75

Introduction to Web Development: Overview of Web Technologies and the Role of HTML and CSS, Understanding the Structure of a Web Page, Introduction to Web Browsers and Developer Tools. [2L]

HTML Fundamentals: Introduction to HTML Tags and Elements, Creating Headings, Paragraphs, Lists, and Links, Working with Images and Multimedia Content, Creating Forms for User Input.[4L]

Basics of CSS: Introduction to CSS and Its Role in Web Page Styling, Selectors, Properties, and Values, Applying Inline, Internal, and External Style Sheets, Formatting Text, Backgrounds, and Borders. [2L]

CSS Layout and Box Model: Understanding the Box Model and Its Impact on Layout, Working with Margins, Padding, and Borders, Positioning Elements using Floats, Positioning Properties, and Flexbox, Creating Responsive Layouts with Media Queries. [2L]

Typography and Colors: Styling Text with Fonts, Sizes, Weights, and Styles, Formatting Text Using CSS Properties, Understanding Color Models and Applying Colors to Elements. [2L]

Images and Multimedia Working with Images: Sizing, Aligning, and Optimizing, Incorporating Videos and Audio into Web Pages, Implementing Responsive Images and Media. [3L]

CSS Selectors and Specificity: Understanding CSS Selectors and Specificity, Applying Styles to Specific Elements and Classes, Using Pseudo-classes and Pseudo-elements. [2L]

Responsive Web Design: Introduction to Responsive Design Principles, Creating Fluid Layouts using CSS Media Queries, Adapting Web Pages for Different Screen Sizes and Devices. [2L]

Web Development Best Practices: Organizing and Structuring Code Files and Directories, Validating HTML and CSS Code, Optimizing Web Pages for Performance, Introduction to Version Control with Git. [3L]

Basics of Javascript: Document Object Model, Data Types and Variables, Functions, Methods and Events, Controlling Program Flow, Built-in Objects and Operators, Validations, Introduction to Server-Side Programming, RESTful API, Node.js Framework. [8L]

CSS and Javascript Based Frameworks and Libraries: Overview of Popular CSS Frameworks (e.g. Bootstrap), using Pre-built CSS Components and Grids, Customizing and Integrating CSS Frameworks into Web Projects. [3L]

Introduction to Django: Model–View–Controller(MVC) Model, Django Structure, HTML Templates, URL Dispatcher, Django Template System, Interacting with a Database, The Django Administration Site, Wrapper Functions, Custom Views GET and POST Methods, Deployment of Django; Automating Tasks with Django. [10L]

Building and Deploying a Website: Planning and Designing a Basic Website Structure, Implementing HTML and CSS to Create the Website, Testing and Debugging the Website across Different Browsers, Deploying the Website to a Local Host/Web Server. [2L]

3CMSMJ1:Web Programming Laboratory

Credit: 1

Marks: 25

Static and Dynamic Webpage Development using HTML, CSS, JavaScript and Django. [30L]

Text/Reference Books:

1. Mastering HTML, CSS & Java Script Web Publishing, Laura Lemay, Rafe Colburn, Jennifer Kyrnin, BPB Publication.
2. Web designing and development, Satish Jain, BPB Publications.
3. HTML & CSS: The complete reference, Thomas Powell, McGraw Hill education.
4. Web programming with HTML5, CSS and JavaScript, John Dean, Joneas and Bartlet learning.
5. Sams Teach Yourself HTML, CSS, and JavaScript All in One, Julie C Meloni, Pearson Education.
6. Learning Web App development, Semmy Purewal, O'Reilly.
7. Django for Beginners: Build websites with Python and Django, William S. Vincent.
